

This Page Is Inserted by IFW Operations  
and is not a part of the Official Record

## BEST AVAILABLE IMAGES

Defective images within this document are accurate representations of the original documents submitted by the applicant.

Defects in the images may include (but are not limited to):

- BLACK BORDERS
- TEXT CUT OFF AT TOP, BOTTOM OR SIDES
- FADED TEXT
- ILLEGIBLE TEXT
- SKEWED/SLANTED IMAGES
- COLORED PHOTOS
- BLACK OR VERY BLACK AND WHITE DARK PHOTOS
- GRAY SCALE DOCUMENTS

**IMAGES ARE BEST AVAILABLE COPY.**

As rescanning documents *will not* correct images,  
please do not report the images to the  
Image Problem Mailbox.

PCT

WORLD INTELLECTUAL PROPERTY ORGANIZATION  
International Bureau

74

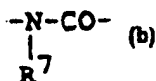
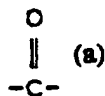
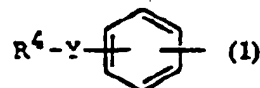
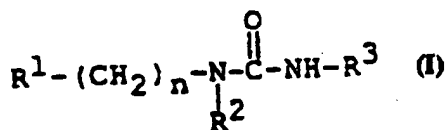
## INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification <sup>6</sup> : C07C 275/28, C07D 213/75, 257/04, 231/12, 401/12, A61K 31/17, 31/44, 31/41, C07D 213/40, 307/38, 277/28, 233/54, C07C 311/21, C07D 333/20		A1	(11) International Publication Number: WO 96/10559 (43) International Publication Date: 11 April 1996 (11.04.96)
(21) International Application Number: PCT/JP95/01982 (22) International Filing Date: 29 September 1995 (29.09.95)		(74) Agent: SEKI, Hidco; Fujisawa Pharmaceutical Co., Ltd., Osaka Factory, 1-6, Kashima 2-chome, Yodogawa-ku, Osaka-shi, Osaka 532 (JP).	
(30) Priority Data: 9419970.0 4 October 1994 (04.10.94) GB 9506720.3 31 March 1995 (31.03.95) GB 9514021.6 10 July 1995 (10.07.95) GB		(81) Designated States: AU, CA, CN, HU, JP, KR, MX, RU, US, European patent (AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE).	
(71) Applicant (for all designated States except US): FUJISAWA PHARMACEUTICAL CO., LTD. (JP/JP); 4-7, Doshomachi 3-chome, Chuo-ku, Osaka-shi, Osaka 541 (JP).		Published With international search report. Before the expiration of the time limit for amending the claims and to be republished in the event of the receipt of amendments.	
(72) Inventors; and (75) Inventors/Applicants (for US only): TERASAWA, Takeshi (JP/JP); 1625-302, Matsugaokanakamachi, Kawachinagano- shi, Osaka 586 (JP). TANAKA, Akira (JP/JP); 9-10-302, Nakano-cho, Takarazuka-shi, Hyogo 665 (JP). CHIBA, Toshiyuki (JP/JP); 1-1-503, Nakatsuji-cho, Nara-shi, Nara 630 (JP). TAKASUGI, Hisashi (JP/JP); 3-116-10, Mozu Umekita, Sakai-shi, Osaka 591 (JP).			

(54) Title: UREA DERIVATIVES AND THEIR USE AS ACAT-INHIBITORS

## (57) Abstract

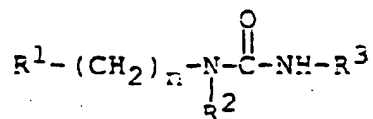
Urea derivatives of formula (I), wherein R<sup>1</sup> is a group of formula (I) (in which R<sup>4</sup> is aryl which may have suitable substituent(s), or heterocyclic group which may have suitable substituent(s), and Y is bond, lower alkylene, -S-, -O-, (a), -CH-, -CONH-, (b), (in which R<sup>7</sup> is lower alkyl), -NHSO<sub>2</sub>-, -SO<sub>2</sub>NH-, -SO<sub>2</sub>NHCO- or -CONHSO<sub>2</sub>-); or thiazolyl, imidazolyl, pyrazolyl, pyridyl, thienyl, furyl, isoxazolyl or chromanyl, each of which may have suitable substituent(s); R<sup>2</sup> is lower alkyl, lower alkoxy(lower)alkyl, cycloalkyl, ar(lower)alkyl which may have suitable substituent(s), heterocyclic group or heterocyclic(lower)alkyl, R<sup>3</sup> is aryl which may have suitable substituent(s) or heterocyclic group which may have suitable substituent(s), and n is 0 or 1, and a pharmaceutically acceptable salt thereof which are useful as a medicament in the treatment of hypercholesterolemia, hyperlipidemia and atherosclerosis.



- 210 -

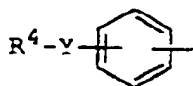
## C L A I M S

1. A compound of the formula :



wherein

R<sup>1</sup> is a group of the formula :



(in which

R<sup>4</sup> is aryl which may have suitable substituent(s), or heterocyclic group which may have suitable substituent(s), and

Y is bond, lower alkylene, -S-, -O-,  $-\overset{\text{C}}{||}-$ ,  
 $=\text{CH}-$ , -CONH-,  $-\underset{\text{R}^7}{\underset{|}{\text{N}}}-\text{CO}-$ , (in which R<sup>7</sup> is lower alkyl),  
 -NH<sub>2</sub>SO<sub>2</sub>-, -SO<sub>2</sub>NH-, -SO<sub>2</sub>NHCO- or -CONH<sub>2</sub>SO<sub>2</sub>-);

or

thiazolyl, imidazolyl, pyrazolyl, pyridyl, thienyl, furyl, isoxazolyl or chromanyl, each of which may have suitable substituent(s);

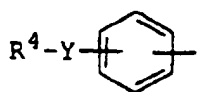
R<sup>2</sup> is lower alkyl, lower alkoxy(lower)alkyl, cycloalkyl, ar(lower)alkyl which may have suitable substituent(s), heterocyclic group or heterocyclic(lower)alkyl,

R<sup>3</sup> is aryl which may have suitable substituent(s) or heterocyclic group which may have suitable

- 211 -

substituent(s), and  
 n is 0 or 1,  
 and a pharmaceutically acceptable salt thereof.

2. A compound of claim 1, wherein  
 $R^1$  is a group of the formula :



(in which

$R^4$  is phenyl which may have 1 to 3 substituent(s)  
 selected from the group consisting of  
 halogen, lower alkyl, di(lower)alkylamino,  
 protected amino, cyano, heterocyclic group  
 which may have mono(or di or tri)-  
 ar(lower)alkyl, hydroxy, protected hydroxy  
 and mono(or di or tri)halo(lower)alkyl;  
 or thienyl, pyrazolyl, imidazolyl,  
 triazolyl, pyridyl, pyrrolyl, tetrazolyl,  
 oxazolyl, thiazolyl, oxadiazolyl,  
 piperazinyl, thiazolidinyl or  
 methylenedioxyphenyl, each of which may have  
 1 to 3 substituent(s) selected from the  
 group consisting of lower alkyl, mono(or di  
 or tri)ar(lower)alkyl and oxo;

Y is bond, lower alkylene, -S-, -O-,  $-\overset{\overset{\text{O}}{\parallel}}{\text{C}}-$ , =CH-,  
 -CONH-, -N-CO- (in which  $R^7$  is lower alkyl),  
 $-\overset{\overset{\text{R}^7}{|}}{\text{N}}\text{HSO}_2-$ , -SO<sub>2</sub>NH-, -SO<sub>2</sub>NHCO- or -CONHSO<sub>2</sub>-);  
 or

thiazolyl, imidazolyl, pyrazolyl, pyridyl,